

1. Apparatus for reducing distortion in a high-resolution switching amplifier  
2 of the type wherein multiple references are switched to a load in accordance with an input  
signal, comprising:  
4 a source of a primary reference signal; and  
circuitry for calibrating a secondary reference signal as a function of the primary  
6 reference signal when the input signal is zero.

2. The apparatus of claim 1, wherein the secondary reference signal  
2 approaches the value of the integral of the primary reference at a pulse-width of one.

3. The apparatus of claim 2, wherein the circuitry includes:  
2 a comparator connected across the load; and  
an integrator connected to receive the output of the comparator.

4. The apparatus of claim 3, wherein the circuitry further includes:  
2 a pulse-width modulator connected to the output of the integrator.

5. A method of reducing distortion in a high-resolution switching amplifier  
2 of the type wherein primary and secondary references are switched to a load in  
accordance with an input signal, the method comprising the steps of:

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- 4            comparing the integral of the primary reference to the integral of the voltage across the load when the input is zero; and
- 6            pulse-width modulating the result of the comparison for use as the secondary reference.